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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,001	03/11/2004	Hideshi Hattori	CU-3633	6288
26530	7590	05/17/2005	EXAMINER	
LADAS & PARRY LLP 224 SOUTH MICHIGAN AVENUE SUITE 1200 CHICAGO, IL 60604			LUM, LEON YUN BON	
			ART UNIT	PAPER NUMBER
			1641	

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/798,001

Applicant(s)

HATTORI, HIDESHI

Examiner

Leon Y. Lum

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 15 April 2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement filed 15 April 2004 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because there is neither an English translation or an explanation on how the 2002-508837 Japanese foreign document is relevant to the application. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

### ***Specification***

1. The title of the invention includes the term "bio-microarray" twice. Is the title intended to describe a substrate for two bio-microarrays?

***Claim Objections***

2. Claim 2 is objected to because of the following informalities: The phrase “whereby the substrate for bio-microarray has the reflection-suppressing function” (lines 4-5) seems to be a repeated limitation. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. In claims 2 and 7-8, line 2, the term “substrate” is vague and indefinite. It is unclear whether the instant substrate is the same embodiment as the substrate in line 1, or whether the instant substrate is a different embodiment.

6. In claims 4-6, the term “fine” is vague and indefinite. The specification does not define the term and one of ordinary skill in the art at the time of the invention would not know how the instant term limits the claimed “uneven structure” and “porous structure”.

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7. In claims 4-6, the term "uneven structure" is vague and indefinite. The specification does not define the term and one of ordinary skill in the art at the time of the invention would not know what type of embodiment is claimed. How is the substrate uneven?

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Hattori (Advanced Materials, 2001).

Hattori teaches high-performance anti-reflection coatings on optical devices. See page 51, left column, 1<sup>st</sup> paragraph.

Since the phrase "for bio-microarray" is an intended use of the substrate, any teaching of an anti-reflective substrate anticipates the instant claim.

10. Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Bogart et al (US 5,468,606).

Bogart et al teach a substrate with an attachment layer and a receptive material layer, wherein the substrate has a coating that is transmissive (i.e. anti-reflection layer)

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or opaque and absorbs suppressed wavelengths (i.e. light-absorbing layer), and wherein the receptive material layer (i.e. immobilization layer) includes a biomolecule that selectively binds to another biomolecule (i.e. probe biomolecule), constituting antigen/antibody, enzyme/substrate, or DNA/RNA specific binding pairs. See column 11, lines 60-63; column 14, lines 59-64; column 18, lines 46-52; and column 27, line 36 to column 28, line 2. In addition Bogart et al teach that diffuse reflection is produced with polystyrene spheres immobilized on the surface (i.e. fine uneven structure). See column 17, lines 2-11. Furthermore, Bogart et al teach a number of distinct and separate test surfaces (i.e. formed in a pattern). See column 41, lines 34-42; and Figures 9A-E and 11.

With regards to claims 3 and 7, since Bogart et al teach distinct and separate test surfaces on a device, the device would include a plurality of distinct and separate transparent, light-absorbing, and receptive material layers, which would anticipate the claimed limitation of the anti-reflection, light-absorbing, and immobilization layers formed in a pattern.

With regards to claim 9, Bogart et al teach general indicia (i.e. marks for positional detection) on the cover of the device. See column 42, lines 48-64; and Figure 9C.

11. Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Pirrung et al (US 5,143,854).

Pirrung et al teach a substrate with raised or depressed regions (i.e. fine uneven structure; pattern; mark for positional detection) for synthesis of polymer capture agents thereon (i.e. at a surface of the substrate), wherein surfaces on the substrate can be made of different material from the substrate and include functionalized glass with light-absorbing characteristics (i.e. light-absorbing layer) and optically transparent surfaces (i.e. anti-reflection layer). See column 11, lines 14-65; and Figure 1. In addition, Pirrung et al teach that peptide and nucleic acid polymers prepared on the substrate (i.e. immobilization layer) can be used in determining sequences which bind to proteins (i.e. probe biomolecule), wherein the polymers can be placed in wells or etched trenches on the substrate (i.e. formed in a pattern). See column 7, lines 49-57; column 8, lines 34-45; and column 10, lines 32-43.

With regards to claim 3, since Pirrung et al teach that the surface of a substrate can be light-absorbing or optically transparent, and that the substrate can have raised or depressed regions, as stated above, the teaching anticipates the instant claim since the raised or depressed regions are considered patterns.

With regards to claim 8, the phrase "for positional detection", directed towards the "mark", is an intended use limitation. The raised regions of Pirrung et al, as stated above, teach the limitation of the "mark" and although the raised regions are not explicitly stated as used for positional detection, they have the capability of acting as positional detection marks and thereby anticipate the claimed limitation.

***Double Patenting***

12. Claims 1-9 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1, 3-6, 12, 14, 16, 18, and 20 of copending Application No. 10/018,718. Although the conflicting claims are not identical, they are not patentably distinct from each other because the copending application teaches narrower limitations of the instant application.

The instant application recites a substrate having a reflection-suppressing function.

The copending application teaches an antireflective film comprising a transparent substrate and a polymer electrolyte film thereon.

The antireflective film of the copending application is a narrower limitation of the reflection-suppressing substrate of the instant application and therefore anticipates the claimed invention of the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Conclusion***

13. No claims are allowed.



14. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure:

Sheppard, Jr. et al (US 6,143,247) teach optical discs with transparent substrates and light-absorbing capture agents.

Nygren et al (US 6,060,237) teach devices with anti-reflective film for optical detection of nucleic acid hybridization.

Neuschafer et al (US 6,078,705) teach sensor platforms with light absorbent layers for parallel detection of analytes.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leon Y. Lum whose telephone number is (571) 272-2878. The examiner can normally be reached on weekdays from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (571) 272-0823. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Patent Examiner  
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05/13/05